

# Turned Drawer Pulls



Making your own knobs is a fast way to add custom details to your furniture projects

BY PHILIP C. LOWE

**W**hen a project calls for turned knobs for drawers or doors, I always make my own. I hate paying for something I can make in my shop. But more important, making every element of a furniture piece, down to the knobs, brings a feeling of accomplishment that I don't get from using store-bought parts.

When turning knobs on the lathe, there are two basic methods to follow and a few different ways to add decorative elements. There also are some tricks for making matching knobs.

## Turn long-grain knobs between centers

You have one initial choice when designing a turned knob. Should it be turned on a

faceplate or as a spindle between two centers? Spindle-turned knobs are made with the grain running in the long direction and attach to the drawer face with a tenon. In this orientation, you can cut several knobs from one length of stock—ideal when a project calls for multiple matching knobs. This typically is the method I use to turn a knob with a narrow diameter.

## Turn multiple knobs from one spindle

—One popular example of a spindle-turned knob is the Shaker drawer pull. A number of classical profiles exist, but they don't vary a great deal. The one shown at the top of the facing page consists of a tenon, followed by a fillet, an

asymmetrical cove called a scotia, and a bead. Some refer to this kind of knob as a mushroom pull.

Begin with 4/4 stock and cut a piece of equal width and thickness. Each knob will require about 2¼ in. of material, so size the length of the material according to the number of knobs you want to make. But don't turn more than four knobs per spindle because it is difficult to create the narrow-diameter tenons on a piece that is too long; the pressure from the tool will create chatter. If I need more than four knobs, I'll turn them from multiple spindles.

Mount the spindle on the lathe and use a roughing gouge to turn a cylinder with a consistent diameter. Then mark off the lo-

# Small knobs



## TURN MULTIPLE KNOBS FROM ONE LENGTH OF STOCK

Rough-turn between two centers as many as four knobs from a blank. Then cut apart the blank to finish each knob individually.



**Rough out a blank to a common diameter.** Then use a parting tool to turn the tenon end of each knob to the diameter of a standard drill bit. Calipers help achieve consistency.

cation of each tenon with a pencil, and turn down the area with a parting tool to the desired diameter. Choose a diameter that is equal to a standard drill bit, as this will make it easy to mount the knobs on the drawer fronts.

After each tenon has been turned to the correct diameter, cut a small chamfer with a skew chisel into the end of the tenon where it meets the next knob on the spindle. This will make it easy to separate each knob. Remove the spindle from the lathe and cut off the individual roughed-out knobs at the bandsaw.

**Separate the knobs for the finish work**—With the chuck mounted in the



**Separate the knobs.** Use a skew to cut a small chamfer on the end of each tenon (left). The chamfer helps guide the bandsaw blade as the knobs are cut apart (above).



# Small knobs (continued)



## TURN INDIVIDUAL KNOBS TO COMPLETION

Mount one knob at a time in a Jacobs chuck and mark the fillet, the cove, and the bead. The pencil marks and calipers help achieve consistent results while turning.



**Remount a knob blank.** Clamp the tenon end in a Jacobs chuck and turn the base of the knob to a diameter greater than that of the tenon.



**Mark for the cove and bead.** Cut grooves at the pencil marks with a skew.



**Turn the cove.** Use a spindle gouge to turn the asymmetrical cove, also known as a scotia.

headstock (I use a Jacobs chuck), insert the tenon end of a knob into the chuck and tighten it. Once you've determined the profile of the knob, mark the points where the fillet, cove, and bead will begin and end. You can do this with a pencil while the lathe is running.

Turn the knob to the desired profile, checking for consistency with calipers along the way. I use a parting tool to cut the flat, a skew to cut the rounded top, and a 1/4-in. gouge to cut the cove. When you are satisfied with the shape, sand the knob to a final finish. I use 120-, 150-, 180-, and 220-grit sandpaper, wetting the wood with a rag and letting it dry between each grade.

To make additional knobs, follow the same steps and use calipers to match the diameters of each section to the first knob.

### Customize a chisel to reproduce a rosette

Once you've mastered the basic knob, you may want to experiment with different

styles and ornamentation, such as a rosette pattern. The trick is being able to reproduce the pattern on multiple knobs. One way to do that is to grind a cutter to match the profile of the decoration. For instance, to cut a rosette pattern I use a scraper custom-ground for that purpose (see the top right photos on the facing page).

Make the cutter from an old, worn-out mill file. Grind one of the cutting surfaces smooth and then determine the shape you would like it to take. Half of the profile is ground into the end of the converted file along with a 10° angle sloping back from the cutting edge.

Once you are nearly finished turning a knob, use the custom scraper to cut the rosette pattern on its face. It's pretty hard to go wrong here; the only thing you need to be concerned with is positioning the scraper in the same location for each knob. If you hold the scraper too close to the center of the knob, the rings will have smaller diameters than a rosette cut with

the scraper positioned farther away from the center.

### Accent a knob with contrasting wood

Another method for decorating a knob is to add an accent with material of a contrasting color. One striking example is to use a maple plug in an ebony knob (see the bottom right photos on the facing page). Feel free to experiment with material other than wood. In my work I've used all sorts of accents, including a ham bone right from the dinner table.

Rough out the knob's profile, leaving extra material on the end grain. Mount a 3/8-in. drill bit in the tailstock with a second Jacobs chuck. Slowly drill into the face of the knob until you've hollowed out the core to about 1/4 in. deep.

Use a plug cutter the same size as the knob hole to cut the plug. (For a knob with a large diameter, the plug could be turned between centers.) Then glue the plug into the knob with epoxy. After the epoxy





**Round the face of the knob.** A proper cut with the toe of a skew chisel will produce a smooth surface on the end-grain face of the knob (above). Then use the skew chisel like a scraper to clean off the button (left).



**Sand and finish with the knob mounted on the lathe.** Start with 150 grit and work toward 220 grit, wetting and drying between each grit. Burnish with a rag or the shavings from turning and apply a penetrating finish.

## Custom cutters

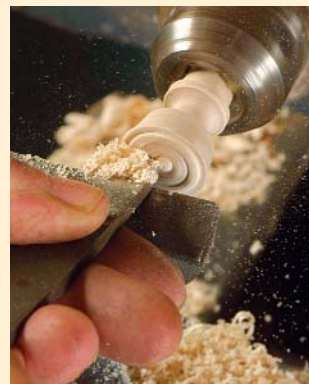
Make your own cutting tool by grinding a profile on an old file to reproduce a decorative cut on the face of a knob. The tool described here was made to cut a rosette pattern.



Grind the face clean.

Half of rosette profile

10° angle cut



**Scrape a rosette on the knob's face.** To produce matching rosettes on multiple knobs, be sure to position the tool at the same distance from the center each time.

## Decorative accents

Add a decorative element to a knob by plugging the center with a material of contrasting color.



**Drill a center hole in the knob.** When the knob is nearly complete, mount a drill bit in the tail-stock of the lathe and slowly plunge it into the workpiece while the lathe is running.



**Plug and trim the end to a finish.** Experiment with different woods, materials, and designs.

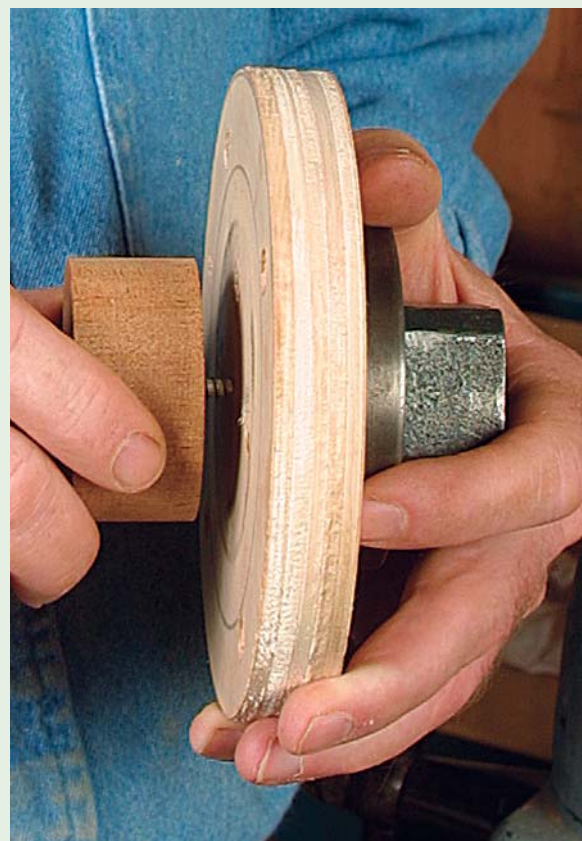




# Large knobs

## TURN LARGE KNOBS WITH A FACEPLATE

Faceplate-turned knobs have the grain running across the face, which allows the grain to blend in better with the face of the drawer. This method is preferred for large-diameter knobs.



**Make a center-screw faceplate.** Plywood screwed to a faceplate is leveled and rounded so that a wood blank can be screwed on and turned round. Drive a lag screw through the hole from behind and screw on the turning blank.

dries, the knob can be turned smooth and then sanded and finished.

### Use a faceplate to make large knobs

A spindle-turned knob is limited in its size. If it's too large, it can be problematic, because the end of the knob will drink up finish and turn the end grain much darker, which can give an unsightly appearance to the front of a piece. The best way to avoid this is to turn a cross-grain pull with a faceplate. As a result, the grain will blend much better with the face of the drawer front.

On a square block, find the centerpoint and sketch the desired diameter of the knob. Then drill a hole in the center to a depth of about  $\frac{3}{8}$  in., which will be used to mount the stock on the lathe as well as on the drawer front.

Next, prepare a faceplate for the stock. You will need a faceplate with a center screw, which is used to attach the workpiece. If you don't have a commercial screw-mounting faceplate, you can make one. Screw a piece of  $\frac{3}{4}$ -in.-thick plywood to a metal faceplate and then turn the plywood round on the lathe. Then mount a drill bit in the tailstock of the lathe with a Jacobs chuck, and slowly drive the bit into the faceplate while the lathe is running. This will give you a through-hole that is centered perfectly. Next, screw a sheet-metal screw or  $\frac{1}{4}$ -in. lag screw into the hole from behind, effectively creating a center-screw faceplate; the screw should be sized to fit in the hole on the wood blank. The protruding end will screw into the hole drilled in the workpiece.

With the workpiece in place, cut its profile following the same steps described earlier to cut the long-grain pull. However, use scraping tools rather than spindle-turning tools because you are turning mostly end grain. Spindle tools may grab the end grain and chip or split off a chunk of the turning. I use  $\frac{1}{4}$ -in. square-nose,  $\frac{1}{4}$ -in. round-nose, and  $\frac{1}{2}$ -in. square-nose scrapers. Mark the location of the fillet, cove, and bead with a pencil, and turn them to the appropriate profile, checking for consistency with calipers along the way. Finally, sand and finish the knob, unscrew it from the faceplate, and attach it (facing page). □

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**Lay out the elements of the knob.** After turning the workpiece round, locate and mark with a pencil the beginning and end of the fillet, cove, and bead.

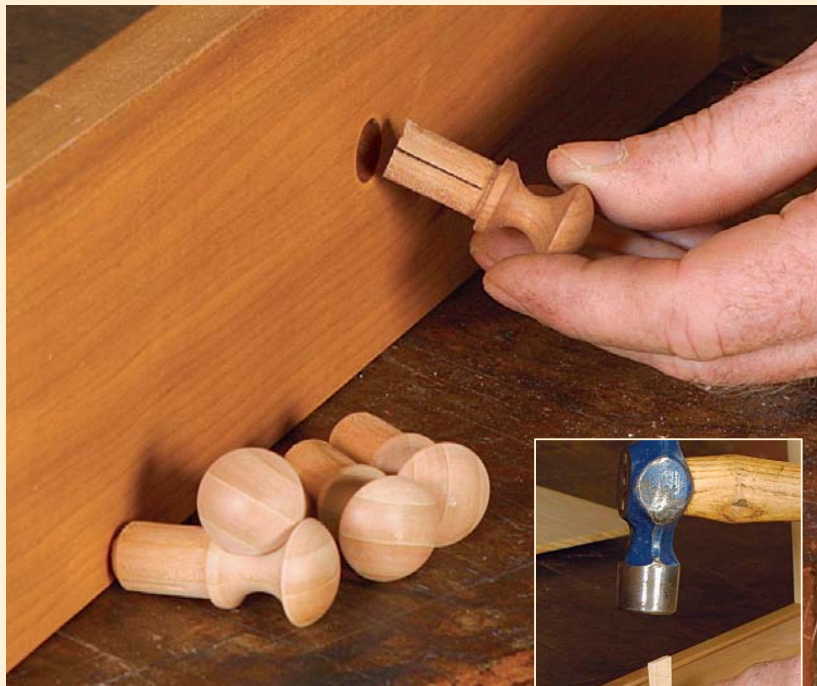


**Turn the cove with a rounded scraper.** The cove is asymmetrical and spans from the base diameter to the major diameter of the knob.



**Round the face of the knob.** Use a scraper to round over the face of the knob. Polish the shape before sanding to a finish.

## ATTACHING DRAWER KNOBS



**Long-grain knobs.** Fit the tenon through a hole on the drawer face and drive a wedge from inside (inset) into the hand-sawn kerf.



**Cross-grain knobs.** Use a screw with the same threading as the one used to mount the knob in the faceplate.